

NEWSLINE

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Homeland security effort breaks new ground

State and local agencies gather for summit

By Don Johnston

NEWSLINE STAFF WRITER

Emphasizing that the Bay Area “is a target-rich environment” for terrorists, Rep. Ellen Tauscher said Thursday it is vital that federal, state and local homeland security efforts be “knitted together.”

Tauscher was a driving force behind the half-day Homeland Security Executive Summit at the Laboratory, bringing together medical and emergency responders, military representatives, state and local officials, industry leaders and researchers from the national labs to address issues of local preparedness in the event of a terrorist attack.

The summit was co-sponsored by the California National Guard and hosted by Livermore and Sandia national laboratories.

“Even prior to Sept. 11, we knew we had work to do. We didn’t understand the scope of the threat, though because of earthquakes in California we had some sense of what our vul-



JACQUELINE MCBRIDE/NEWSLINE

Rep. Ellen Tauscher looks on while Simon Labov speaks during ceremonies marking the opening of the Radiation Detection Center.

nerabilities were. But no one was prepared for what happened on Sept. 11,” Tauscher said.

“We don’t want to find ourselves in such a situation here in the Bay Area and state of California, but we’re all in agreement about the fact we are in a target-rich environment,” she noted. “We’re the

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Laboratory technologies play a key role in protecting the nation from terrorism

By Stephen Wampler

NEWSLINE STAFF WRITER

The work of Lab researchers is fundamental for protecting the nation against weapons of mass destruction, Rep. Ellen Tauscher told a group of employees Thursday.

Tauscher made her remarks as she, Director Michael Anastasio and several Laboratory associate directors helped officially open the Radiation Detection Center, or RDC, with a ribbon-cutting ceremony.

“The leading edge, out-of-the-box thinking of Livermore researchers has been important in countering the increasing threats to our nation,” Tauscher said.

Anastasio termed the RDC’s opening as an important event for the Laboratory.

The uses of radiation detection range from detecting nuclear materials in the fight against terrorism to medical technology to assisting in the fundamental understanding of the universe, Anastasio said.

For years, much of the Laboratory’s expertise in radiation detection resided within the Nuclear Test Program.

When nuclear testing was halted, the Laboratory restructured and many of Livermore’s radiation detection experts applied their skills in other parts of the Laboratory, including

See **RDC**, page 7

JGI celebrates completion of human genome

By Charles Osolin

NEWSLINE STAFF WRITER

In a feat likened by one veteran scientist to emerging from the “dark ages of biology,” an international research team announced Monday that the 13-year effort to decode the human genome is essentially complete.

Through the work of 20 sequencing centers in six countries, including the Department of Energy’s Joint Genome Institute (JGI) in Walnut Creek, the order of about 98 percent of the 3.1 billion base pairs in human DNA has been determined to an accuracy of 99.99 percent. The sequence has been made publicly available on the Web and is already being used by thousands of scientists and pharmaceutical developers seeking new ways to prevent, diagnose and treat human diseases and disorders, as well as new clues to the evolution of life.

JGI Director Eddy Rubin said the availability of the human DNA sequence “marks the beginning

of an era that promises profound insights into the molecular functioning of all forms of life. Our understanding of cellular processes, the impact of organisms on each other and on the Earth’s environment, as well as fields of biological investigation yet to be identified, will be directly influenced by the discoveries and technologies of genomics.” (See the ‘UpClose’ insert on genomics in this issue of *Newsline*.)

See today’s special
Up Close insert on genomics

Added Elbert Branscomb, a senior bioscientist at the Laboratory and the founding director of JGI, “We simply can’t get at those questions in the sort of medieval ignorance that has been our lot until now.”

DOE Office of Science associate director Ari Patrinos, who heads the Office of Biological and Environmental Research, said the achievement marks a “wonderful paradigm shift in biological research.” Patrinos predicted that DOE’s Microbial Genomics and Genomes to Life programs,

See **JGI**, page 8

Chemistry inaugurates new Isotope Science building

Chemistry and Materials Science officially unveiled the new office building that is the centerpiece of the directorate’s Isotope Science Facility project.

An estimated 75 employees turned out for an official grand opening ceremony Wednesday morning and toured the new facility.

“This great new building is a testament to the quality of people in Chemistry & Materials Science and the importance and relevance of their work to the Lab,” said Tomas Diaz de la Rubia, associate director for Chemistry. “This gives us a nice home base for the people who work in the analytical and nuclear chemistry aspects of the Stockpile Stewardship and nonproliferation programs.”

Al Ramponi, division leader for Analytical and Nuclear Chemistry, said approximately 40 of his 145 employees will be located in the new two-story building. The ground floor will be for unclassified work.

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down to
Earth**
— Page 3



**Simon Labov
at the Center**
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LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar
on page 4

Friday
18

Lab employees and contractors are invited to a **Good Friday gathering** from 12:05-12:45 p.m. in the Bldg. 543 auditorium. Contact: Harry Briley, briley1@llnl.gov or 2-9238.

Monday
21

The **Laboratory is closed** for its spring holiday.

Saturday
26

Del Valle Fine Arts will conclude its concert season with a recital performance by Canadian pianist David Jalbert at 8 p.m. at the First Presbyterian Church in Livermore. His performance will include works by Corigliano, Ravel, J. S. Bach, and Chopin. Tickets are \$12 general, \$9 for seniors and students, and free for youth through high school. Contact: Del Valle Fine Arts, <http://www.delvallefinearts.org> or call 447-2752.

Sunday
27

"Operation Mom," a group of Tri Valley women, will be at the Livermore Walmart from 9 a.m. to 1 p.m. collecting trial-size toiletries, snacks and other donations to send to military personnel stationed in Iraq. Contact: Ann Lane, 443-3091.

Up
&
Coming

The Compensations, Benefits and Worklife Department has invited **Fidelity Investment Co.** to speak at the Lab on Tuesday, April 29, from noon – 1 p.m. in the Bldg. 123 auditorium. Roland Jacobson, vice president of Investment Consulting, will present his views on the economy and the market, historical mutual fund performance and advanced allocation principles. All are welcome to attend, there is no pre-registration required. Seating is limited. Contact: Benefits Office, 2-9955 or the Webpage at www.llnl.gov/jobs/benefits

The **Amigos Unidos Hispanic Networking Group** is sponsoring a Cinco de Mayo celebration from 11:30 a.m. to 1 p.m. on Thursday, May 1, in the pool picnic area. The celebration will include a presentation of high school scholarships and entertainment by Baile Folklorico Los Almecas. To pre-order tamales or a lunch plate, contact: Yahel De La Cruz, 4-3507; Jessica Barraza, 2-6750; Xavier Cabrales, 2-7448; or Michael T. Martin, 3-6580.

The **LLESA summer pool program** will run June 16-Aug. 22. Swim registration forms will be available in the LLESA office (Bldg. 415, room 142) starting Monday, April 28. Swim lesson sign-ups will begin Monday, May 19. Lab employees and LLESA members can still sponsor family and friends to participate in the summer pool program. Contact: LLESA Office, 2-9402.

Houston tours NIF



JOSEPH MARTINEZ/IBIS

State Assemblyman Guy Houston (right) received a briefing and tour of NIF from Greg Tietbohl during an afternoon visit to the Laboratory last Friday. Houston also met with Lab Executive Officer Ron Cochran and was briefed on the Lab's Homeland Security Organization by Associate Director Wayne Shotts.

IN MEMORIAM

Patrick O'Hern

Services were held this week for Patrick J. O'Hern, Deputy Laboratory Counsel, who died on April 12. He was 56.

O'Hern had been a member of the Lab's legal staff since joining the Laboratory in 1983. From 1992-1994 he served as acting Laboratory counsel.

O'Hern received his bachelor's degree at Princeton in 1969, graduating cum laude from the Woodrow Wilson School of International and Public Affairs. He received his J.D. from Boalt Hall at UC Berkeley in 1973.

From 1976-82 he was special counsel for the Department of Energy. He was an active member of the Alameda County Bar Association and the Princeton alumni association. He was also a girls' softball coach in the Oakland Girls Softball League.

"We are all very saddened by the news of Pat's passing and our thoughts are with his family during this difficult time," said Jan Tulk, the Lab's Legal Counsel and AD of Administration and Human Resources. "He will always be remembered for his hard work, his professionalism and his friendship. We will miss him very much."

O'Hern is survived by his wife, Patricia; his daughter, Maureen; two brothers and a sister.

James Edward Trisler

James Edward Trisler died at his home in Oroville Sunday, April 13. He was 70.

Trisler was born and raised in Edina, Minn. He served three years in the U.S. Air Force and worked in the Electronics Engineering Department at the Laboratory for 33 years. In 1988, he retired from the Laboratory and moved to Oroville.

Trisler loved sports and the outdoors, especially golf, boating, fishing, hunting, skiing and camping. He is remembered for his sense of humor and

playfulness. A generous and energetic worker, he served in various capacities and donated many hours to activities of the Kelly Ridge Recreation Association and Kelly Ridge Men's Golf Club.

Trisler is survived by his wife of 31 years, Judy Trisler of Oroville; three sons, Mike Trisler of Westminster, Colo., Steve Trisler and Jim J. Trisler of Fremont; one daughter, Julie Storms of Fremont; three brothers, Dick Trisler and Tom Trisler of Sacramento, Bill Trisler of Lacrosse, Wis.; three sisters, Betty Landgren of Oroville, Mary Christian of Bloomington, Minn., and Doris Bennett of Alamo, Tex.; and seven grandchildren.

A Celebration of Life will be held at 1 p.m. Monday, April 21, at the Kelly Ridge Garner Pavilion, 5131 Royal Oaks Drive, Oroville, Calif. In lieu of flowers, the family requests donations be made to Butte Home Health and Hospice, 10 Constitution Drive, Chico, Calif. 95973.

Newsline

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Contacts:

Media & Communications manager: Lynda Seaver, 3-3103
Newsline editor: Don Johnston, 3-4902

Contributing writers: Elizabeth Campos Rajs, 4-5806; Bob Hirschfeld, 2-2379; David Schwoegler, 2-6900; Anne M. Stark, 2-9799; Stephen Wampler, 3-3107; Gordon Yano, 3-3117. For an extended list of Lab beats and contacts, see <http://www.llnl.gov/llnl/06news/NewsMedia/contact.html>

Designers: Denise Kellom; Julie Korhummel, 2-9709

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Telephone: (925) 422-4599; Fax: (925) 422-9291

e-mail: newsline@llnl.gov or newsonline@llnl.gov

Web site: <http://www.llnl.gov/PAO/>

AROUND THE LAB



Earth Expo emphasizes ecological education, efficiency

By Anne M. Stark

NEWSLINE STAFF WRITER

Earth Expo 2003 is coming next week to a Laboratory employee area near you. The employee area by the Lab's swimming pool to be exact. Its theme this year is "Reduce Your Impact on the Only World We've Got."

After a one-year hiatus, Earth Expo 2003 will feature displays on energy efficiency, solar power and water conservation, accompanied by the food fare from employee networking groups and live big band swing music by the LLESA Dance Band.

This year's Expo runs from 11 a.m. to 3 p.m. on Wednesday. The parking lots adjacent to Bldg. 311 and Bldg. 317 will be closed from 6 p.m. Tuesday until 5 p.m. Wednesday.

What's really different this year are two special guest speakers talking on different days about two very different aspects of the environment.

The first speaker jump-started the Earth Expo celebration this past Wednesday (April 16). Ben Santer, a scientist in the Lab's Program for Climate Model Diagnostics and Intercomparison, presented "Recent Developments in Climate-Change Detection and Attribution Research."

At noon Thursday (April 24) in the Bldg. 543 auditorium, the second guest speaker, Mathis Wackernagel, the Sustainability Program director for the nonpartisan public policy organization "Redefining Progress," will present the "Ecologi-

cal Footprint."

According to Wackernagel, the ecological footprint documents humanity's demands on nature. A population's ecological footprint is the biologically productive area needed to produce the resources used and absorb the wastes generated by that population. Since people use resources from all over the world, the ecological footprint allows the calculation of the combined size of these areas — wherever they may be on the planet.

Wackernagel will outline ecological footprint accounting and demonstrate how it shows that human demand currently exceeds ecological production, the natural capital upon which current and future generations depend.

He will discuss the concept of sustainability and present how the ecological footprint can be used to transform sustainability from a vague concept to a measurable goal. In short, what individuals can do to reduce their impact on our environment, the theme of this year's Earth Expo.

At the Expo on Wednesday, the Lab's Cyclotrons will be one of the groups performing free bicycle safety checks and minor tune-ups.

Other Laboratory departments present and active at the Expo include the sponsor Environmental Protection Department's Pollution Prevention, Environmental Restoration, Community Relations and Chemtrack groups, the Lab's Fire Department, Fleet Management, Energy Management & Mechanical Utilities, Health Services and more.

Outside agencies participating in the Expo include the U.S. Environmental Protection Agency, Bay Area Air Quality Management, City of Livermore, Alameda Creek Alliance, Lawrence Berkeley National Laboratory, Giving Something Back, Light Energy Systems, Boise Cascade, U.S. Fish & Wildlife, Solar Integrated Technologies, Alden Lane Nursery and PG&E.

For more information on Earth Expo 2003 or recycling, log on to the Environmental Protection Department pollution prevention Website at <http://www.epd/p2>.



Amigos Unidos celebrates Cinco de Mayo

The Amigos Unidos Hispanic Networking Group is sponsoring a Cinco de Mayo celebration on Thursday, May 1, from 11:30 a.m. to 1 p.m. in the pool picnic area that will include food, music and a presentation of high school scholarships.

Pre-sales are now underway for tamales and lunch plates. Tamales are \$14 per dozen and \$7.50 per half-dozen; and the lunch plate is \$6 (includes choice of carnitas, chile colorado or one tamale plate). All sales benefit the group's scholarship fund.

Cinco de Mayo celebrates the Battle of Puebla, fought in 1862 when a small Mexican army suc-

cessfully fought a larger, better equipped French force. May 5 was declared a national holiday in honor of the Battle of Puebla after the French were finally overthrown five years later.

To place an order for tamales or a lunch plate, contact: Yahel De La Cruz, 4-3507; Jessica Barraza, 2-6750; Xavier Cabrales, 2-7448; Michael T. Martin, 3-6580; Laura Martinez, 2-7037; Marta Holm, 2-8870; Marina Gonzalez, 3-7904; Marian Barraza, 3-7063; Irene Ortega, 2-6350; Rosa Yamamoto, 2-0454; Chris Ynzunza, 3-1848; Teresa Hauck, 2-8777; Patricia Martinez, 4-5227; Michele Cardenas, 3-2796; Maria Self, 4-9777; or David Castro, 3-7556.



Sabbatical program applications due May 1

Applications are now being accepted for the Laboratory's Sabbatical Program. Laboratory employees are encouraged to invite their university collaborators or faculty at universities where they wish to establish collaborations to apply.

The program, initiated by the University Relations Program in 2001, is designed to attract talented professors from top-ranked universities to spend their sabbatical leave at the Laboratory.

In addition, it is intended to serve as a mechanism for bringing unique scientific and engineering expertise into the Lab and establishing new and continuing relationships for the future recruitment of students and postdocs. The Sabbatical Program supports the inclusion of graduate students and postdocs in the professor's Laboratory visit.

The first two years of the program have been highly successful. In FY 2003, eight sabbatical

faculty and 16 students were in residence at LLNL.

The sabbatical faculty has come from universities throughout the United States as well as France, Italy, The Netherlands and Japan. Four of the 16 professors have come from UC campuses at Berkeley, Davis and Riverside.

Applications are due May 1 and are evaluated and ranked by a Labwide review committee representing all directorates.

University Relations advertises the program annually in selected journals and through targeted promotion on key university campuses, particularly in the UC system.

For more information, see the Sabbatical Program Website: <http://www.llnl.gov/urp/sabbatical.html>

For additional information about the application process, contact Paul Dickinson in URP at 3-4855 or dickinson3@llnl.gov.



**COMING
APRIL 28**

**Basic First Aid & CPR Online
Training Course**

**Free for first 300 employees
and/or families who sign on
April 28 through May 18**

**Learn how to handle emergencies
until professional help arrives**

This two-hour training program is designed for people with little or no first aid training. It features interactive lessons and self-testing to present the basics of emergency care.

- Work at your own pace from Lab or at home.
- Log-on 24-hours a day.
- Stop and re-start when you have time.
- Make it a family learning activity.

See Newsline Work & Life Balance insert April 25 for complete details and instructions on how to access the course.

Sponsored by the
Safety, Security and Environmental
Protection Directorate

This course was developed by the National Safety Council and is being offered as part of the Lab's ongoing safety awareness effort. The course does not meet any LTRAIN requirements. No certification is given because there is no hands-on skill training.



NEWS YOU CAN USE

New SARS advisory from CDC

A health advisory has been issued by the Centers for Disease Control and Prevention (CDC) dealing with a potentially serious viral pneumonia called Severe Acute Respiratory Syndrome (SARS).

CDC has received reports of outbreaks of SARS in travelers returning from or traveling through specific areas in Asia including Singapore, Hong Kong, Mainland China and Hanoi, Vietnam. Symptoms include a fever greater than 100.4° F which can go as high as 104° F and one or more respiratory symptoms, such as a dry non-productive cough, shortness of breath or difficulty breathing.

Employees planning business or personal travel to one of the areas should be aware that the CDC has recommended against non-essential travel.

The Lab's Health Services Department (HSD) supports this guidance and encourages, if possible, use of alternative means of interaction such as phone and videoconference until the situation is under better control.

Employees considering Laboratory sponsored travel to these areas should consult with HSD on possible precautions prior to travel by calling Keith Sheirich, nurse practitioner, at 3-6653.

HSD recommends all Lab hosts of foreign travelers who may be traveling from or traveling through any of the above mentioned countries take the following actions:

- Provide visitor with a copy of the LLNL SARS advisory that can be found on the HSD Website: <http://www-r.llnl.gov/healthserv/>
- Encourage all foreign nationals to acquire necessary travel health insurance prior to departing their home country in case they develop symptoms after arrival to the United States and require medical evaluation and treatment.
- Inform potential visitors that should they become ill after arriving in this country that they should seek immediate medical attention and discourage any face-to-face contact with others until it has been determined that they do not have SARS.

Notices regarding SARS will also be posted at the Badge Office in an effort to highlight the health concerns regarding SARS. Detailed information on SARS can be found on either of the following Websites:

<http://www.cdc.gov/ncidod/sars/>
<http://www.who.int/csr/en/>

Nanotechnology is subject of DDLS

Cavendish Professor of Physics and Cambridge University Professor Richard Friend will discuss "Nanotechnology and Self-Organizing Structures" in a DDLS address at 10:30 a.m. Tuesday in the Bldg. 123 auditorium.

Since 1980, Friend has been on the faculty in the Department of Physics, University of Cambridge, where he is the Cavendish Professor of Physics.

Friend has pioneered the study of organic polymers as semiconductors, and has demonstrated that these materials can be used in a wide range of semiconductor devices, including light-emitting diodes, transistors and photocells.

Director Michael Anastasio invites all employees to attend. The lecture will be broadcast on Lab Channel 2 Thursday, May 1, at 10 a.m., noon, 2, 4, and 8 p.m. and Friday, May 2 at 4 a.m.



Richard Friend

Technical Meeting Calendar

Tuesday
22

PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION

"Hadronic Effective Field Theory Applied to Strange Nuclear Systems," by Jeff

McIntire, College of William and Mary. 10:30 a.m., Bldg. 211, room 227 (badge required). Contacts: Erich Ormand, 2-8194, or Pat Smith, 2-0920.

RADIATION DETECTION CENTER

"Imaging with Refractive X-ray Lenses," by Charles Gray, Adelphi Technology, Inc. 11 a.m., Bldg. 151, room 1209 (uncleared area). Contacts: Gregory Schmid, 3-7866, or Christie Shannon, 3-6683.

PHYSICS & ADVANCED TECHNOLOGIES DIRECTORATE-WIDE SEMINAR SERIES

"Controversial Shock Compression Curve of Deuterium," by William J. Nellis. 2 p.m., Bldg. 2128, room 1000 (uncleared area). Contact: Alan J. Wootton, 2-6533 or wootton1@llnl.gov.

Thursday
24

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Quantum Computation & Information," Part I-Introduction, by Sandu Popescu, Uni-

versity of Bristol. Bldg. 319, room 205 (uncleared area). Contacts: Patrice Turchi, 2-9925, or Linda Bodtker, 3-0421.

PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION

"Mixed-Symmetry Approach to the Nuclear Shell Model," by Vesselin Gueorguiev, Louisiana State University. 1:30 p.m., Bldg. 211, room 227 (badge required). Contacts: Erich Ormand, 2-8194, or Pat Smith, 2-0920.

ELECTRONICS ENGINEERING

"Transcutaneous RF-Powered Neural Recording System," by Pedro Irazoqui-Pastor. 9:30 a.m., Bldg. 235, room 1090 (uncleared area). Contacts: Greg Lesage, 2-2390, OR Denise Williams, 3-3443.

H DIVISION

"Investigations of SiO₂ Polymorphs and the SiO₂/Si Interface by Positron Annihilation Spectroscopy," by Gerhard Brauer, Institut für Ionenstrahlphysik und Materialforschung. 10:30 a.m., Bldg. 219, room 171 (badge required). Contacts: Palakkal Asoka-Kumar, 2-9671, or Darlene Klein, 4-2868.

Friday
25

PHYSICS & ADVANCED TECHNOLOGIES & ENGINEERING/PHOTONICS GROUP

"Ultrafast X-rays: Production with Laser-Produced Plasmas and Application," by Antoine Rousse, LOA - ENSTA Laboratoire d'Optique Appliquée, France. 10 a.m., Bldg. 219, room 163 (badge required). Contact: Mark Lowry, 2-6160.

PHYSICS & ADVANCED TECHNOLOGIES/IGPP

"Dust Enshrouded High-Redshift Galaxies and Gravitational Lensing," by Andrew W. Blain, Caltech. Noon, Bldg. 319, room 205 (badge required). Refreshments will be served. Contacts: Michael Gregg, 3-8946, or Sandra Maldonado, 3-0621.

CHEMISTRY & MATERIALS SCIENCE MATERIALS SCIENCE & TECHNOLOGY

"Deformation Micro-mechanisms in Gamma-TiAl," by Patrick Veysiere, LEM CNRS-ONERA, France. 3:30 p.m., Bldg. 235, Gold Room. Coffee and cookies will be served at 3:20 p.m. Contacts: Tom Felter, 2-8012, or Rebecca Browning, 2-5500.

CHEMISTRY & MATERIALS SCIENCE/MATERIALS SCIENCE & TECHNOLOGY

"Materials and Nanoscience Research at the Australian National University: Applications from Optoelectronics to Medical Diagnosis," by James S. Williams, Australian National University, Canberra, Australia. 10 a.m., Bldg. 235, Gold Room. Coffee and cookies will be served at 9:50 a.m. Contact: Tom Felter, 2-8012, or Rebecca Browning, 2-5500.

April
29

PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION

"On Variations in the Peak Luminosity of Type Ia Supernovae," by Frank Timmes,

University of Chicago. 10:30 a.m., Bldg. 219, room 163 (badge required). Contacts: Rob Hoffman, 4-6411, or Pat Smith, 2-0920.

MAY
1

PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION

"Microscopic Description of Normal Parity Bands in Even-Even Heavy Deformed

Nuclei," by Gabriela Popa, Rochester Institute of Technology, Department of Physics. 3 p.m., Bldg. 211, room 227 (badge required). Contacts: Erich Ormand, 2-8194, or Pat Smith, 2-0920.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to tmc-submit@llnl.gov. For information on electronic mail or the newsgroup llnl.meeting, contact the registrar at registrar@llnl.gov.

AROUND THE LAB



Simon Labov named to lead Lab's Radiation Detection Center

Simon Labov, who helped create the Laboratory's Radiation Detection Center, has been named the center's first director.

Labov's appointment was announced Wednesday in an administrative memo signed by the eight Laboratory associate directors whose directorates are participating in the Radiation Detection Center, or RDC.

"The Laboratory has incredible capabilities and talent in radiation detection. At the same time, the nation has some imposing problems on the table in this area. I'm excited about having this center to help address these problems," Labov said.

Labov assisted in the 1999 creation of the RDC and has served as its acting director since then. While the center was initially an ad hoc organization, it has since grown to become a full-fledged center.

Since 2001, Labov has also been the deputy leader of I Division (optical science and technology) within the Physics and Advanced Technologies Directorate.

An astrophysicist, Labov joined the Laboratory in 1987 as a postdoctoral researcher in V Division, the Laboratory's high-energy density physics division. He later became the division's leader of the Advanced Detector Group.

His early Lab work focused on starting a program to develop high-resolution X-ray detectors that operate at very low temperatures.



Simon Labov

Labov later built this program to include optical, ultraviolet and gamma-ray detectors, and ion detectors for time-of-flight mass spectrometry of large bio-molecules.

During the past year, he also served as the assistant to the director of the Laboratory Science and Technology Office.

Labov received a bachelor of science degree in physics from Stanford University in 1980, and a master of arts and Ph.D. in astronomy from UC Berkeley in 1984 and 1988 respectively.

Space search technologies are adapted to fight against terrorism

By Stephen Wampler

NEWSLINE STAFF WRITER

Detection technologies developed to search for black holes and supernovae in space have a new down-to-earth application — helping to fight terrorism.

The same technologies used to study astrophysics phenomena at the edge of the universe are also being adapted to search for faint emissions from nuclear materials or nuclear devices.

"Our collaborative team has been working at the forefront of technology for detecting weak emissions from outer space," said Simon Labov, who heads the Laboratory's Radiation Detection Center.

"We've been able to take these advanced technologies and adapt them for national security uses, such as detecting radiation from nuclear materials."

"In both cases," Labov added, "the emissions are faint and there is a lot of background noise. Having advanced high-sensitivity detectors can solve both problems."

For years, Livermore researchers have collaborated with scientists from the California Institute of Technology, the Goddard Space Flight Center,

UC Berkeley, Columbia and Harvard to develop the latest technologies for detecting and imaging space phenomena.

Now, the research for space is assisting in the detection of nuclear materials or nuclear devices, Labov said.

"Experimental astrophysics is a large enterprise and many top-notch people are devoting themselves to this effort. Their experience, their achievements and their help can now also be used for countering terrorism and other homeland security projects," Labov said.

In effect, the research efforts of about 50 researchers and \$20 million spent during the past five years is being leveraged for detecting nuclear materials, Labov explained.

One Livermore space detection project is the launch later this year of the High Energy Focusing Telescope, which has been developed jointly by LLNL, CalTech, Columbia University and the Danish Space Research Institute. The telescope will be released near Fort Sumner, N.M., and will ascend to 120,000 feet aboard a high-altitude scientific balloon.

A key objective of the High Energy Focusing

Telescope, consisting of a telescope, mirrors and detectors, will be to study how supernovae create and distribute most of the elements heavier than helium.

As an example of the improvement in detection technologies, Labov cited that a decade ago gamma rays could not be efficiently focused.

When launched this fall, the High Energy Focusing Telescope will fly with an array of mirrors that will focus gamma rays onto imaging detectors that provide 10 to 100 times more sensitivity than is achievable with conventional non-focusing systems.

Integrated circuits work in conjunction with cadmium-zinc-telluride crystals to measure gamma ray signals at hundreds of different points, producing clear pictures with high spectral resolution, while operating at low power in a compact package that can be produced at low cost.

These detectors will be the heart of both future satellite missions to study black holes at the edge of the universe and hand-held detector/cell phone instruments to find and analyze nuclear materials here on Earth.

Lab developing mobile radiation detection devices and networks

By Stephen Wampler

NEWSLINE STAFF WRITER

In the future, customs agents, police and other workers could carry cell phones that double as radiation detectors and serve as part of a vast, nationwide detection network.

This device and more than a dozen other advanced technologies to detect clandestine nuclear materials or nuclear devices are under development at the Laboratory.

Some examples of projects under way by Lab scientists associated with the RDC are:

- **RadNet, A Cellular Telephone-based Radiation Detector Network:** Under development for six months, RadNet is based on small detector units that will feature the capabilities of a cell phone, radiation sensor, Personal Digital Assistant, internet access and a Global Positioning System locator.

The RadNet units would be deployed as part of a wide network that would report and transmit data about the possible location of clandestine nuclear materials or devices.

"In effect, all of the phones operating at any time are part of one large detector that is spread out throughout an entire geographic area," Labov explained.

Along with being lightweight and able to operate at low power, each unit would have suf-

ficient energy resolution to distinguish between different types of radioactive materials, such as medical isotopes, industrial sources or "dirty bomb" materials.

"This is a device that people will use because people want other capabilities, like cell phones," Labov said. "They'll take care of them and they'll keep the batteries charged."

In addition to use by police and customs agents, the cell phone radiation detectors could be deployed by firefighters, utility workers, hazmat teams and others.

Prototypes of the device are expected to be ready in a few months.

- **Ultra-Spec, the Ultra-High Resolution Gamma Ray Spectrometer:** Ultra-Spec uses very low temperatures to measure gamma rays from nuclear materials with high precision.

Operating within one degree of absolute zero (or -459 degrees Fahrenheit), the instrument records the change in temperature, or warming, when a single gamma ray hits the detector's superconducting material, usually tin.

The temperature increase, caused by one gamma ray, is measured precisely within 1/10 of a percent.

People using Ultra-Spec will be able to achieve a fivefold increase in spectral resolution, or the ability to isolate emissions from different types of radioactive materials, allowing easier identification of the exact composition of radioac-

tive materials.

The first prototype of this detector has already been produced.

- **Gamma Ray Imaging Spectrometer:** Part of a family of technologies, this detector is one of five gamma ray imaging systems under development by Laboratory researchers. Each of the five gamma ray imaging detectors has different capabilities for a variety of applications.

The Gamma Ray Imaging Spectrometer permits pictures to be taken of radioactivity emissions in large areas. The spectrometer first shows the presence and then the location of radioactive materials.

"Recent advances in microelectronics allow us to build a gamma ray camera that consists of many gamma ray sensors all working together to take a picture like a digital camera for gamma rays," Labov said.

It is believed that this technology will provide a tenfold increase in sensitivity for detecting nuclear materials or devices, according to Labov. About the size of a large-screen television, a system designed to search for nuclear weapons or nuclear materials should be ready in about one year.

Initial development of the instrument was started for arms control efforts to check the location of nuclear missile warheads in a nonintrusive manner.



CLASSIFIED ADS

See complete classified ad listings at
<https://www.ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1995 - SATURN SC2, 5-spd., 4 cyl., 2-door, silver w/black interior, airbags, tilt, cc, tinted windows, 97,000 miles, very good cond., \$4,000. 925-456-7972

1997 - Eldorado excellent condition, all power, low miles, Bose sound system, CD, cassette, security system, power seats. Have to see. 510-582-2938

1989 - Blue seven-seat Toyota LeVan, some body damages but the engine runs good, only 90k original miles. \$600/bo. 510-886-6390

1994 - Pearl white Mitsubishi 3000GT - 5SPD, 10 disc CD changer, PW, PS, excellent condition, \$7,900.00 925-447-2670

1957 - T-Bird with 2 engines and most parts. Great Project \$2500/OBO. 925-443-4065

1994 - Honda Civic EX, ~135K miles, 5 Speed, AC, Cruise, CD, AM/FM, Dual Air Bags, Moon Roof, PW, PL, Alarm. In good condition. Great on Gas! \$4900 OBO 925-895-8868

1986 - Honda-CRX, Red 5-speed, new timing belt w/pump, new battery, easy smog, 125,000 miles. Gets 40 mpg, great little commute car. \$1,500. 925-207-1548

1993 - Ford Explorer XLT, great condition, roof rack, hitch, low mileage. \$5000 925-580-8961

1997 - 15th Anniversary Edition Toyota Supra good condition. 67,000 miles, 30 & 60 K maintenance, new belts, oil changes 5K miles. \$16,500 obo. 925-560-0472

1986 - Lincoln Towncar loaded 70,000 mi. \$1650.00 925-606-8533

AUTOMOBILE ACCESSORIES

Used Yakima roof rack components. Q-towers, bars, stretch kit, ski-mounts, bike racks, basket, etc. Will sell all or some. Cheap! 925-513-6633

Tire/wheel new 205X75X15 plus other sizes, truck bedliner best offer 925-735-6002

BICYCLES

Tandem bicycle, good shape, low miles. Fell once, wife refuses to get back on. Asking \$600. 925-373-1512

Cannondale F700SX LEFTY mtn bk 2001 Magura/Clara Disk, only 30hrs use! NEVER OFF ROAD! Red frame/blk extras. No scratch, chip or dirt! Pics by email 209-518-4141

Matched set his/hers Schwinn Suburban circa 1963. Excellent condition, ride smooth and solid, \$350. 925-606-0948

BOATS

1967 Piper Cherokee 140. 1700 SFOH. \$29,000. 925-548-4809

1999 SEA-DOO GSX Limited 951 \$5,500 OBO Includes 2000 single ski ShoreLander trailer (BLACK) Looks and runs like new! 925-280-1548

1982 Wellcraft Bowrider, 18 ft. Very good cond. 115hp Evinrude. Depth finder, CB, full cockpit snap cover. Trailer w/new tires. \$3800/obo 925-449-7570

1999 Sanger DX closed

bow, Skipole, bimini top, new trailer, black scorpion motor, fast, very clean \$16,000 OBO 925-437-1602 925-240-5130

ELECTRONIC EQUIPMENT

Computer: 800mhz Athlon, 128mb ram, 40gb hd, dvd-rom, nic, geforce256 ddr video, stereo sound, usb, Win98, keyboard, mouse: \$250 510-429-9260

Kenwood stereo. Six CD player, dual cassette, am-fm receiver, equalizer, large speakers, remote. Excellent condition. Paid \$890 in 1990. \$125 OBO. 925-846-3653

Computer w/ 15 inch Monitor, optical mouse and HP deskjet printer. CD-RW & CD-ROM, Windows XP, 533 MHz Intel Celeron. Practically NEW. \$250 OBO 209-834-0114

I have 2 DirecTV P4 access Cards. They have never been programmed. 1 card \$50 2 cards \$90. 925-371-8015

Sony tape deck with dual meters and tapes, Ether link card by 3 com Best offer 925-735-6002

Typewriter IBM Executive with typewriter table on casters \$70 925-828-0458

GIVEAWAY

Free Printer! HP Desk Writer. 925-447-9162

Exercise rider I have stubbed my toe on one time too many. Pick it up in Brentwood and its yours. 925-513-6633

Approximately 1/3 cord almond/oak firewood. You haul. 209-835-6553

Good, six year crib and mattress. Free. 925-447-0411

HOUSEHOLD

Cal King bed-in-a-bag, Dan River. Includes comforter, shams, & skirt. Dark, multicolored pattern. Excellent condition. \$40 OBO. 925-846-3653

Exec. solid oak Desk \$200/obo. 1930s solid oak Armoire \$2,200/obo. Whirlpool 20cu almond Refrigerator \$125/obo. All excellent condition. 209-403-4942

Queen sized Mediterranean bedroom set. Triple dresser, mirror, two night stands, chest, headboard. Good condition \$550 BO. 925-449-1128

Living room chairs - 2 High quality southwestern design fabric \$250/OBO 925-447-2697

Race Car Toddler bed, uses crib matteress. \$30 925-449-1340

Ralph Lauren King comforter - Windward pattern (denim). Brand new, never used. \$100/OBO. 209-612-8052

Three oak highback swivel barstools. Dark walnut finish, good condition. \$100 for all three. 925-371-1607

Free freezer, works fine. dimensions 28 by 60 inches. You haul it. 925-485-3680

MISCELLANEOUS

4 piece American Touristor luggage in good condition. Locks and has keys. Asking 45.00 510-582-2938

Shop Smith Mark V, good condition, lots of extras \$550/OBO 925-443-4065

OAK Athletics vs NY Yankees 2 seats on Sat 5/10 1:05PM or Sun 5/11 1:05PM MVP seats on third base line (Section 125, Row 13, Seats 1&2) \$54/game 925-449-5481

Leather Jacket Medium, never worn \$50, water ski jacket XL \$35, child activity saucer \$20, child door gate \$10. 925-245-1414

Ford 9n series tractor with towner 3pt.disc. \$2800.00 or best offer 925-454-1749

American Flags & more w/min LEDS. Look great on. \$5. Fund Raiser, RELAY for LIFE, American Cancer Society. Call 925-373-9435 or 925-373-7434

Table saw tilting arbor 8 1/4 circular saw and 4 inch jointer, 3/4 hp motor dual shaft on table with casters and extra saw blades delta \$400 925-828-0458

Hitachi 10 inch compound miter saw, excellent condition. 160.00 call Kevin. 209-839-0420

Chevy Champions On Ice, May 30, San Jose HP Pavilion. 5 tickets, Sec. 109, Row 2. Together \$325 or 3 and 2 at \$65 each. 925-447-0411

MOTORCYCLES

2001 - CR250 Honda, Immaculate condition, new plastics, sticker kit, FMF Pipe, Pro Tapers and extras. \$4000 firm 209-815-6549, 209-830-8503

1991 - Kawasaki Vulcan 1500cc. Looks and runs great! Only 16K Miles, includes s/bags, 2/helmets, & windshield. black w/pinstripes \$3300 OBO 925-245-1414

1999 - Honda CR250, excellent condition, \$3250.00 obo. 209-815-6962

PETS & SUPPLIES

Western pleasure show saddle. One of the last saddles made by Rowell. Berry pattern silver. Matching breast plate. \$2500 BO. 925-449-1128

Horse for sale, 10 year old quarter horse gelding, \$1,000/OBO 925-321-1904

NEED A COCKATIEL CAGE? I am selling one in good condition, with stand, perches, and 3 stainless steel food dishes. Black metal. \$15.00. 925-454-8874

RECREATION EQUIPMENT

Pool Cover - Former LLNL pool cover ~35ft Long x 20ft Wide with center pole for attaching to reel \$25/obo 925-447-2697

Swim Coat. Livermore High School. Green with Gold lining. Keeps swimmer warm. Large. Like New. Retail for \$80. \$40 firm. 209-835-5031

Nordic Track \$100, Stationary bike \$75 925-443-4065

Heavy duty treadmill. Motorized and will incline. Paid \$1000 new. Will sell for \$200. 510-881-8536

RIDESHARING

Express your commute, call 2-RIDE for more information.

Oakland/Montclair - New vanpool forming; traditional (5/40) schedule. We will start when one more rider signs up. Contact Gary at ext. 2-9831, or Ron at 510-530-1289, ext. 2-9831

Palo Alto & surroundings - Looking

for staff to car pool, from Palo area, M-F regular working hours. 650-858-0458, ext. 3-3368

Danville - Driver/rider needed to complete 4-person carpool. Diablo Rd. area. Work hours 8:15-5:00 925-831-1569, ext. 2-9858

Patterson - Vanpool. Seeing red over gas prices? Tired of "killing" your car? Ride with us. Work hours 7:30-4:00. 209-892-2118, ext. 2-9502

Manteca - 4 person pool ride & drive. 7:30 to 4. Leave Chevron at Yosemite & Union 6:30 AM. Drive every 4th day. Alternate phone 28507. 209-823-5593, ext. 3-8539

SERVICES

AT HOME Provider, 2 mins from lab. My children love Cathy very much but we do not need her services anymore. 925-455-9076

Roofing, 28 years experience, fully insured 925-454-9200

Exterior House Painting - 18 yrs. exp. Call for free estimate. 209-956-3718

SHARED HOUSING

Livermore - Single parent w/2 daughters has room avail for rent. Mstr Bdrm/Ba, all amenities, warm friendly environment. Female pref \$600/mo 925-606-0260

Livermore - Shared House near Lab. For those looking for a higher standard. 3br/2.5ba, many amenities. \$900 408-242-8664

Livermore - 1 Bedroom available in a 3 bedroom house. Full privileges, shared bathroom. \$600 total a month (\$600 deposit). Available now. 925-895-8868

Danville - Danville retirees house available while they travel, approx. 6/1 to 9/15. 3 BR, 2.5 baths, \$2400/mo (925)837-5988 or 925-837-5988

TRUCKS & TRAILERS

2001 - Fleetwood Flair 30H Class A motorhome. Excellent condition, exceptionally clean. 23K mi. \$51,000. 925-606-6338

1978 - Dodge D150 4 spd camper shell 98K miles new alt. Very good body. \$2000/OBO 925-446-2697

1997 - Dodge Ram 1500 62K mi. Excellent condition. Lift kit, rims, tires, Flowmaster, many, many extras- call for more information. \$16,500. 925-606-6338

2001 - SixPac Cabover camper, Dual fridge, Stove, Sink, Solar battery charger, very clean in excellent condition, MUST SELL \$4000 OBO 925-437-1602 925-240-5130

1997 - Ford F-250 Power stroke diesel, 142K miles, commute truck, XLT, Camper shell cc, tw, at, keyless entry. Original owner. \$12,495. Excellent condition. 925-634-8023

1986 - Wilderness 5th Wheel. Light weight. 22ft. Sleeps 4. Good condition. \$3500.00 925-443-6052

1987 - Parting out Chevy Blazer. Call for description of parts. 925-606-8533

1999 - Tahoe LT Z71, loaded, low miles, extended warranty, custom wheels, great condition. \$22,000 OBO 925-556-6162

1989 - 89 Ram 50 150k+ mi. Starts but needs work. Radiator leaks, may have blown head gasket. nice project for jr. mech. \$200 or trade

VACATION RENTALS

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

SOUTH LAKE TAHOE - 3 Bedroom 2 bath Chalet, newly remodeled, nicely furnished, all amenities, great for families, RESERVE NOW FOR SUMMER! 209-599-4644

WANTED

Wanted one boat trailer for 12ft aluminum boat 209-838-1385

Looking for some go kart parts for a father/son project or would be interested in buying a used racing kart. 925-777-9024

WANTED: 2-4 Giants Tickets, 6/25-26, 9/26-28. Will pay up to \$100 a pair 209-834-0194

Moving Boxes, any size 925-776-5612

MOVING Boxes Wanted. Will pick up. 925-449-8348

We would like to purchase a bail of Timothy hay once every other week. The hay must be Timothy. 925-373-8317

Metal bed fram for single bed. 925-447-1023

WANTED: pair GIANTS tickets, preferably Saturdays or Sundays. Possibly 2 or 3 games. 925-960-0263

Small RV Class C, Pop-Up Tent Trailer or Camping trailer to rent for the last weekend in June. 925-373-3429

Experienced Bartender Needed for Wedding in Lodi on 7/19/03, 2:30-8:30 p.m. \$12.50/Hr, Call leave msg. 209-824-9751

Live-in house/pet-sitter during our 10 day vacation starting 4/24. Must love animals (dog, bird, geckos). Tracy. Call if interested. 209-839-9757

Nanny needed Manteca. Free room+ board+\$150.00wk. Single mother with one child ok. Mature person and experience with children a must! 209-825-0738

WANTED: 1992 or 1993 GMC Typhoon SUV, white color, less than 100K miles, clean, will pay up to \$15K, call Evan 925-455-6174

Looking for someone to repair and service a Bally Slot Machine. 209-835-7312

JUSTIN TIMBERLAKE and CHRISTINA AGUILERA CONCERT tickets at Oakland Arena on Friday 6/6. Need 3 tickets. 925-447-2466

Postage stamp collections, new and old, and related paper items. Any size collection considered. 925-449-1294

Quiet, clean, non-smoker man seeks room to rent in Tracy for four nites a week. 949-291-4036

Video Camera, Sony TRV99. Give me a call. 209-518-2156

Services and merchandise listed in Newsline are not guaranteed. It is up to the buyer to scrutinize services purchased.

RDC

Continued from page 1

Chemistry and Materials Science, Physics, Defense and Nuclear Technologies (DNT) and the Nonproliferation, Arms Control and International Security (NAI) directorate.

Now, the RDC is the Laboratory's new home for coordinating radiation detection research.

The primary technical focus of the RDC is the detection, identification and analysis of nuclear materials and nuclear devices as part of the nation's fight against terrorism.

While the center unofficially opened its doors in September with new offices in Bldg. 132S, the RDC has presented monthly seminars and conducted other projects for about two years.

Simon Labov, who joined the Laboratory in 1987 as a postdoctoral researcher developing X-ray detectors for astronomy, has been serving as the acting director of the RDC and has just been appointed as the RDC's director. Christine Shannon is the center's administrator.

Established under a memorandum of understanding, the RDC boasts participation of eight Lab directorates and the LLNL Homeland Security Organization.

"Historically, Lawrence Livermore has had a great deal of expertise in radiation detection," Labov said. "What the center does is leverage our past work to help meet today's security needs."

More than a dozen advanced R&D projects for detecting clandestine nuclear materials or devices are now under way and coordinated by the center.

The technologies under development range from a cell phone that doubles as a radiation sensor, to gamma ray imagers and gamma ray spectrometers that provide increased detection capabilities for nuclear materials. (See story at



JACQUELINE MCBRIDE/NEWSLINE

From left: Tomas Diaz de la Rubia, Simon Labov, Ellen Tauscher, Michael Anastasio, Bill Goldstein and Wayne Shotts cut the ribbon for the Lab's new Radiation Detection Center.

bottom of page 5.)

"In the wake of the Sept. 11, 2001 attacks, we were able to help various federal agencies because we offered a coordinated and easy way to access the Laboratory's radiation detection capabilities," Labov said.

Jeff Richardson, of the Laboratory's Nonproliferation, Arms Control and International Security (NAI) directorate, noted, "Even though the RDC's efforts started prior to Sept. 11, this center is exactly what the Laboratory and the nation need as part of their response to the threat posed by terrorism."

More than 200 Laboratory employees are involved in

radiation detection research, with everything from growing crystals and developing detectors to serving on the Nuclear Emergency Search Team.

Labov and Richardson view the RDC as an umbrella organization to provide cohesion for Lab radiation detection efforts, and as something of an "information exchange."

Some of the activities the RDC uses to enhance the Lab's radiation detection capabilities include sponsoring monthly seminars and classes, hiring students and postdocs, and staging workshops.

To date, the center has sponsored more than 30 seminars, including talks on high-energy neutron imaging, gamma-ray detection, Department of Energy radiation detection needs, work with the International Atomic Energy Agency and structural features of semiconductors for nuclear spectroscopy.

Last summer, the RDC brought six college students into the Laboratory to conduct radiation detection research. For 2003, Labov says he would like to more than double that number.

"Because of the decline in nuclear power and nuclear engineering departments on university campuses, there has been a shortage of

young scientists trained in radiation detection," Labov notes. "We are working to attract and help train students and postdocs to assist in solving important national security problems."

In addition to working with students in nuclear science, the center is providing training in radiation detection to postdocs coming from related fields such as high-energy physics and astrophysics.

RDC staff have won plaudits for organizing a number of workshops on topics important in the field of radiation detection.

Last August, the center assisted in organizing a joint Department of Energy (Department of Transportation workshop that focused on cargo container shipping security. In March 2000, the RDC set up a DOE/Defense Threat Reduction Agency conference on "out-of-the-box" concepts for detecting shielded nuclear materials from 1,000 feet away.

One of the RDC's principal goals — with even more emphasis since Sept. 11 — is to foster the development of innovative radiation detection technologies for Lab programs.

The center also serves as an institutional resource for the Laboratory and government agencies, such as DOE, the Defense Threat Reduction Agency, the Defense Advanced Research Projects Agency and others.

As the center develops, it will provide special facilities for radiation detection instrument development,

demonstrations and joint experiments.

Although the primary use of new radiation detection technologies will be locating nuclear materials and the fight against terrorism, the advances will also find use in other scientific fields.

Other applications, said Labov, include arms control verification, use in diagnostics for the National Ignition Facility, environmental monitoring, astrophysics and the search for dark matter.

The eight Laboratory directorates that have combined resources to form the RDC are: NAI; Physics and Advanced Technologies; Chemistry and Materials Science; Engineering; Defense and Nuclear Technologies; the National Ignition Facility Programs; Safeguards, Security and Environmental Protection; and Energy and Environment.

The concept of the RDC started in NAI's Proliferation Prevention and Arms Control (PPAC) program and built upon Chemistry efforts to have a Labwide radiation detection group monthly meeting.

PPAC supported the Radiation Detection Center in its early days and provided a program focus for its activities. In short order, the RDC expanded beyond monthly meetings to include training, proposal development, hiring students and outreach efforts.

"If any employees have ideas for radiation detection or are working in the field and are not in contact with us, I'd encourage them to reach us, so we can assist them," Labov said.

The RDC has recently established its own Website at rdc.llnl.gov. Its office in Bldg. 132S is room 1757. The center's phone number is 3-1141, its mail stop is L-177, and e-mail may be sent to rdc@llnl.gov

“

What the center does is leverage our past work to help meet today's security needs.

— Simon Labov

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JACQUELINE MCBRIDE/NEWSLINE

Simon Labov discusses radiation technologies displayed during the ceremony opening the Radiation Detection Center.

CHEMISTRY

Continued from page 1

"Over the last 18 months, we have been able to expand our division and many of our employees are shoehorned into offices in Bldg. 151 and in nearby trailers," Ramponi said. "We're really excited to have this new building."

Many of those housed in the adjacent Bldg. 151 will begin moving into their new offices next week.

The 22,000-square-foot building, numbered Bldg. 155, sits immediately east of Bldg. 151 and is about the size of Safeguards and Security's Bldg. 274. Features of the office building designed by the award-winning San Francisco architectural firm Fong and Chan include a 155-seat auditorium and 65 offices.

Construction on the \$8 million project began in December 2001. "CMS has been growing fast and there has been a shortage of offices," said Al Moser, construction project manager.

Other components of the Isotope Sciences Facility project include seismic retrofitting of Bldg. 151; retrofitting the heating, ventilation and air conditioning systems in Bldg. 151 and 154; and clean-up of material and equipment in Bldg. 241.

"This facility is going to be a great asset for Chemistry and the institution," Moser said.



JACQUELINE MCBRIDE/NEWSLINE

Tomas Diaz de la Rubia, AD for Chemistry & Materials Science, officially opens the new Isotope Science Facility at a ribbon-cutting ceremony Wednesday. The new facility, Bldg. 155, features a 155-seat auditorium and 65 offices and is located immediately east of Bldg. 151.

SUMMIT

Continued from page 1

engine of the economy, we are the place where a lot of the ingenuity and innovation of the 21st century were born.

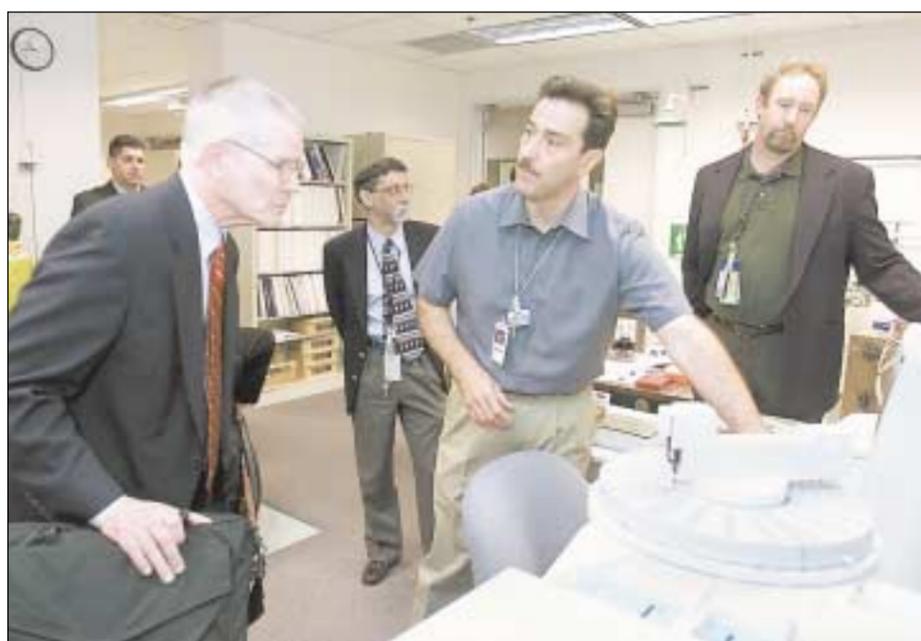
"We have the opportunity to lead the country again at a time of trouble, and that is because of the ingenuity and the innovation of the people here," Tauscher said. "There is no better thing for us to be doing at this time than working together to protect the American people."

Recollecting the events of Sept. 11, Tauscher said that those in Washington and public service felt that somehow they might have "connected the dots in a different place and different time," but without the context of Sept. 11, the nation was unprepared. "While we may not have been culpable for what happened, we all felt tremendously responsible.

"We vowed at that moment that we were never going to allow this to happen again," she said, a determination that led to strong bipartisan support for "harmonizing and integrating" the Homeland Security efforts of a wide range of agencies.

"The kind of planning we had before September 11 was woefully inadequate," Tauscher said. "We hadn't connected the dots."

The "dots," or warning signs, were present well before Sept. 11, she said, "but without the context of Sept. 11, the enormity of it, the tragedy of



JACQUELINE MCBRIDE/NEWSLINE

George Vinson, director of the California Office of Homeland Security, is briefed on work at the Forensic Science Center by scientist Armando Alcaraz (center).

it, the pain of it, the lingering loss, the fear of it, the boldness of it, the success of it," people could not understand that "the world of asymmetry was going to be with us forever.

"That fear and foreboding has galvanized us all in this commitment" to protect ourselves, the homeland and our ideals, Tauscher said.

She vowed to clear "bureaucratic red tape" and find resources to make sure first responders at the local level are prepared. When the first people show signs of being ill from an attack, "people are going to pick up a telephone and dial 9-1-1. It doesn't ring in Washington, it rings wherever you —



JACQUELINE MCBRIDE/NEWSLINE

Brig. Gen. Keith Huber

the first responder — are.

"It's vitally important that we knit together this state so the rest of the country can then follow us," she said, noting that this is the first summit of its kind in the country.

Also speaking at the summit was George Vinson, director of the California Office of Homeland Security, who said "California and the nation have come a long way since Sept. 11," though much remains to be

done.

In another keynote address, Brig. Gen. Keith Huber delivered a stirring tribute to those serving in the military. Mim John, vice president of Sandia California, and Wayne Shotts, head of LLNL's Homeland Security Organization, also made presentations.



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JGI

Continued from page 1

which will build on the data and technology developed by the Human Genome Project, will provide "innovative and effective solutions" to such problems as environmental cleanup and global warming, as well as "wondrous new energy sources for the United States and the world."

The JGI, a consortium formed in 1997 by Lawrence Livermore, Lawrence Berkeley, and Los Alamos national laboratories, was responsible for sequencing human chromosomes 5, 16 and 19, which make up about 11 percent of the genome.

The JGI has also sequenced the genomes of a variety of microbes, marine animals and other organisms to provide points of comparison that could shed light on the nature and functioning of the human genetic code.

The JGI invited Bay Area civic and educational leaders to its facility on Monday to watch the press conference announcing the completion of the Human Genome Project, hear briefings on the JGI's role in the project and its plans for the future, and tour the JGI's state-of-the-art sequencing facility. The celebration also marked the 50th anniversary of the landmark paper by Francis Crick and James Watson revealing the double-helix structure of DNA.